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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,898	04/30/1999	MICHAEL P. CAREN	10990105-5	7610
22878	7590	12/23/2005	EXAMINER FORMAN, BETTY J	
AGILENT TECHNOLOGIES, INC. INTELLECTUAL PROPERTY ADMINISTRATION, LEGAL DEPT. P.O. BOX 7599 M/S DL429 LOVELAND, CO 80537-0599			ART UNIT 1634	
DATE MAILED: 12/23/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.



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## **FINAL ACTION**

### ***Status of the Claims***

This action is in response to papers filed 5 October 2005 in which claims 2, 5, 8, 10-12, 17, 49-52, 55-56 were amended and a Terminal Disclaimer was filed. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 6 July 2005 under 35 U.S.C. 112, second paragraph and under 35 U.S.C. 102(a) are withdrawn in view of the amendments. The previous rejections under 35 U.S.C. 103(a) are maintained. The previous rejection under obviousness-type double patenting is withdrawn in view of the Terminal Disclaimer. Applicant's arguments have been thoroughly reviewed and are discussed below. New grounds for rejection necessitated by amendments are provided.

The examiner and art unit for this application have changed. Please address future correspondence to BJ Forman, Art Unit: 1634.

Claims 1-18 and 20-48 are under prosecution.

### ***Claim Rejections - 35 USC § 103***

Claims 1-18, 20-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldeschwieler et al issued 18 January 2000) in view of Weber et al (U.S. Patent No. 4,328,504, issued 4 May 1982).

The rejection is maintained from the previous office action. The text is not reiterated.

### **Response to Arguments**

Applicant asserts that because Weber is not directed to method of fabricating biopolymer arrays, one of ordinary skill in the art would not combine the teachings of Weber and Baldeschwieler. The argument has been considered but is not found persuasive because

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Baldeschwieler specifically teach an Ink Jet Device and computer control of the "ink-jet device"(Example 1). As such, the ink jet art of Weber is analogous to that of Baldeschwieler.

Applicant further asserts that the instant inventors are concerned with problems of correct deposition of biopolymers. Applicant argues that because Weber is concerned with printing ink, which is not a biopolymer, the reference is not properly usable in rejecting the instant claims. The argument has been considered but is not found persuasive because, as stated above, Baldeschwieler is specifically interesting in ink-jet devices. Therefore, art in the ink jet technology is analogous and combinable with Baldeschwieler.

**New Grounds for Rejection:**

***Claim Rejections - 35 USC § 102/103***

Claims 1-18, 20-48 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Graves et al (Anal. Chem. 1998, 70: 5085-5082).

Graves et al discloses the preparing of DNA sequences in arrays on glass slides in the title and abstract. On page 5085, second column, first sentence, the depositing of microdroplets in precise locations is described as targeted locations. Table 2 on page 5086 sets forth arraying equipment inclusive of video camera and microscope items. In the bridging sentence between pages 5085 and 5086 the robotic table which accomplishes the arraying is indicated as an X,Y system with additionally Z direction movement. In the first paragraph of the first column on page 5086, deposition is described with a video camera system. Desired spot locations for various substrates are disclosed on page 5088, first column, in the section entitled "Droplet Deposition" via, for example, 1-mm centers or deposition in a 96-well plate or droplets spaced 500 um apart. On page 5090, second column, the section entitled "System Performance" describes Measuring reproducibility of deposition which reasonably discloses

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comparison of targeted deposition with actual deposition as in instant claim 1, pads (c) and (d) and instant claims 8 and 31. This imaging disclosure also reads on instant claim 2 and is illustrated in Figure 7 on page 5091 of the reference. This section also discloses drying of the spots as required in parts (a) and (b) of instant claim 1. Variation in spot deposition is shown on page 5091, Figure 7, via fluorescently tagged oligonucleotide spots and further illustrated as the process via ink spots also in said Figure. Oligonucleotides as disclosed in the reference are reasonably species of polynucleotides as instantly claimed. A specie of a claimed invention as disclosed in a reference is deemed to anticipate the claimed invention. The arraying of different polynucleotides in such arrays is disclosed in the reference on page 5085, first 2 sentences after the abstract as in instant claim 3. Gene oligonucleotides in spots of Figure 7 of 21 bases are disclosed in the first full sentence in the second column on page 5091 of the reference which are DNA as being gene sequences and are hybridizable (and complementary CDNA) and thus single stranded (see title) and thus anticipate the limitations of instant claims 5-7. Light from fluorescently labeled material is scattered in all directions as partially imaged in Figure 7 of the reference which is also indicative of a result of an image utilized in spot comparison as per instant claims 10-12, 29, and 30. The system of the reference fabricates multiple arrays as shown in Figures 2 and 3 on pages 5087 and 5088 with related discussion as per instant claim 13 in that the substrate is complex and made up of a set of slides and 96-well plates. Instant claim 13 does not define any limitation as to complexity or simplicity of the multiple array substrate. Piezo deposition nozzles in the system of the reference are also disclosed on page 5086, first column, first full paragraph, as also required in instant claim 27.

Graves et al further teaches deposition by a processor in communication with the deposition system (Fig. 1) whereby reproducible arrays are manufactured (Fig. 7 and text on page 5091). While they do not specifically teach deposition "in accordance with a target array pattern" the broad phrase "in accordance" encompasses the reproducible arrays of Graves.

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The preceding rejection is based on judicial precedent following *In re Fitzgerald*, 205 USPQ 594 because *Graves et al* is silent with regard to a target array pattern. However, the pattern recited in Claims 1-18 and 20-48 is deemed to be inherent in the reproducible arrays of *Graves et al* because absent a definition of "target array" which distinguishes it over a first array produced by *Graves*, subsequent arrays produced by *Graves* are deemed "in accordance with" the first array.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the method of *Graves et al* to produce arrays in accordance with a defined pattern (e.g. target array pattern). One of ordinary skill in the art would have been motivated to do so based on the desire to reproducibly manufacture arrays as taught by *Graves* (page 5090, last paragraph).

The burden is on applicant to show that the claimed (property X) is either different or non-obvious over that of *Graves et al*.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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### **Conclusion**

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.  
Primary Examiner  
Art Unit: 1634  
December 21, 2005